SEAT NO :

MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016/2017

MMA 1033 – VISUAL PROGRAMMING

(All Sections / Groups)

19 OCTOBER 2016
9.00 am – 11.00 am
(2 Hours)

INSTRUCTIONS TO STUDENTS

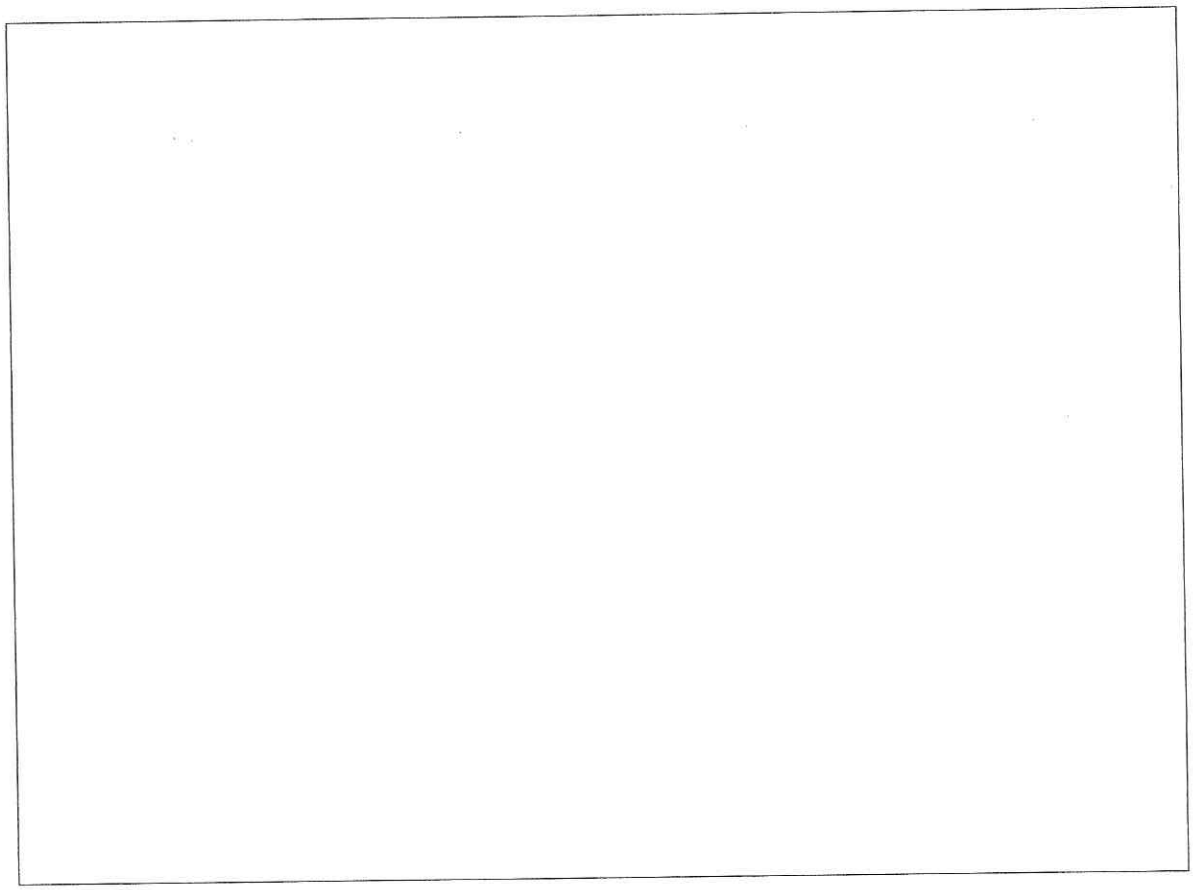
1. This question paper consists of 10 pages (including the front page).
2. Answer **ALL** questions.
3. Print all your answers in the answer box associated with each question.
4. Write your **SEAT NUMBER** on the question paper top right hand corner on this page.

QUESTION 1

(a) Based on the processing codes below, draw a shape as you will expect on the *Display Windows*.

```
size(480,120);
beginShape();
    vertex(180,82);
    vertex(207,36);
    vertex(214,63);
    vertex(407,11);
    vertex(412,30);
    vertex(219,82);
    vertex(226,109);
endShape(CLOSE);
```

[3 marks]



Continued...

(b) Color coding is determined by RGB. Explain this code and each values in the function fill() and rect().

```
fill (255, 100, 0, 0);
rect (mouseX, mouseY, 30, 50);
```

[4 marks]

(c) The following are the functions in *Processing* to generate the line, ellipse, and triangle. Draw the shapes as you will see on the *Display Windows*.

i) line(50,60,10,90);

ii) ellipse(50,50,90,10);

iii) triangle(10,60,30,30,50,100);

[3 marks]

Continued...

QUESTION 2

(a) What is the values of x, y and z from this declaration of variables and initialization and partially run the program?

```
float x = 5.0;
float y;
y = x + 3.5;
float z = x+y*2;
```

[3 marks]

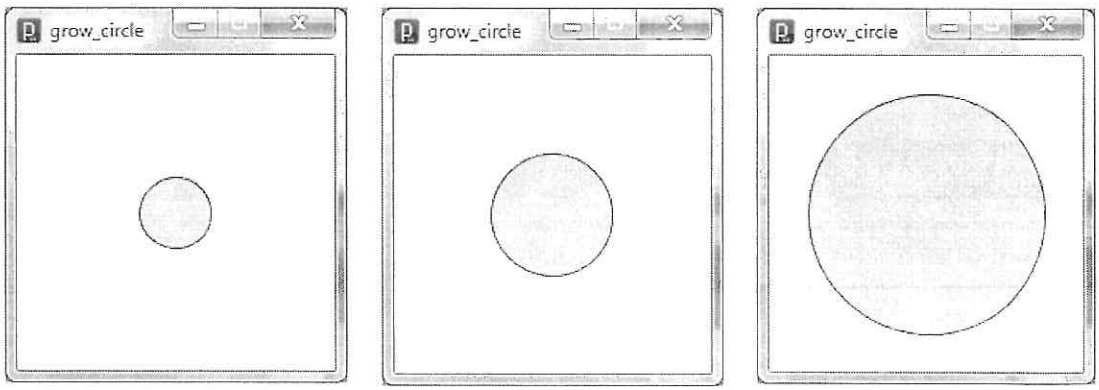
x=

y=

z=

(b) Complete your codes using Processing to make the circle grow in size.

[3 marks]



Continued...

```
int circleSize=0;
int circleX=100;
int circleY=100;

void setup() {
 size(200,200);
}

void draw()  {
 background(255);
 stroke(0);
 fill(175);
ellipse(_____,_____,_____,_____);

_____;
}
```

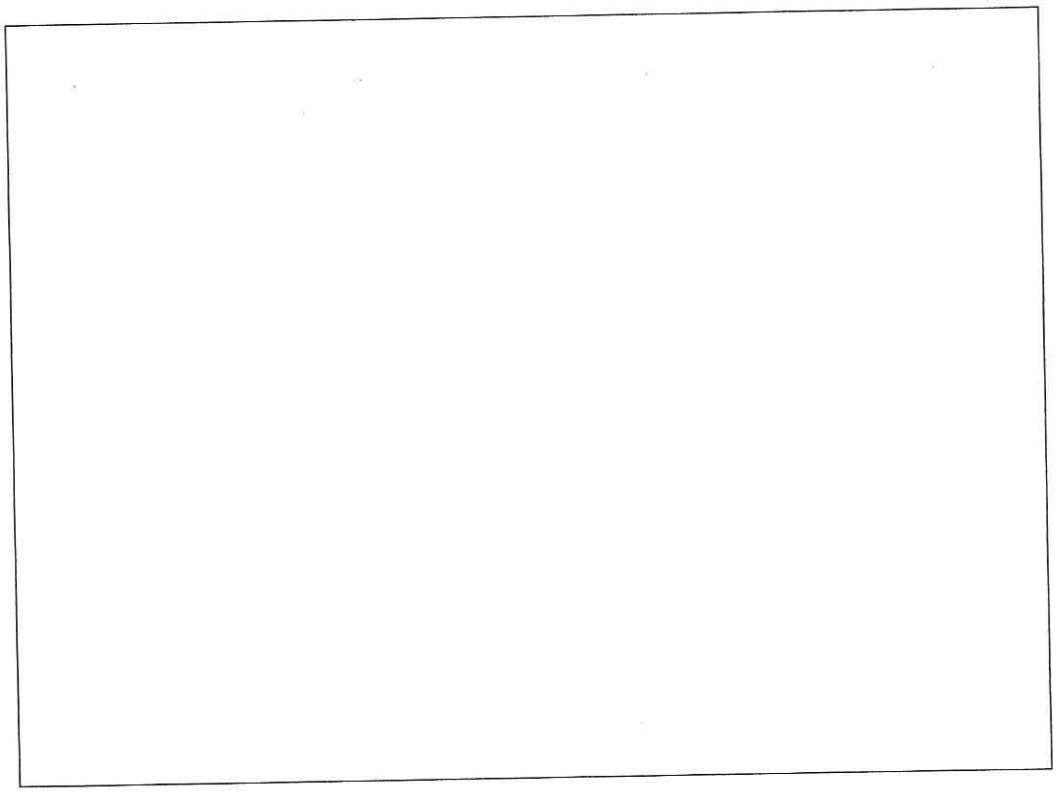
Continued...

(a) Based on the processing codes below, draw the shape as you will expect on the *Display Windows*.

[4 marks]

```
size(400,200);
int x=30;
int y=20;
int h=30;

rect(x,y,200,h);
x=x+100;
rect(x,y+h,200,h);
x=x-120;
rect(x,y+h*2,200,h);
x=x+100;
rect(x,y+h*3,200,h);
```



Continued...

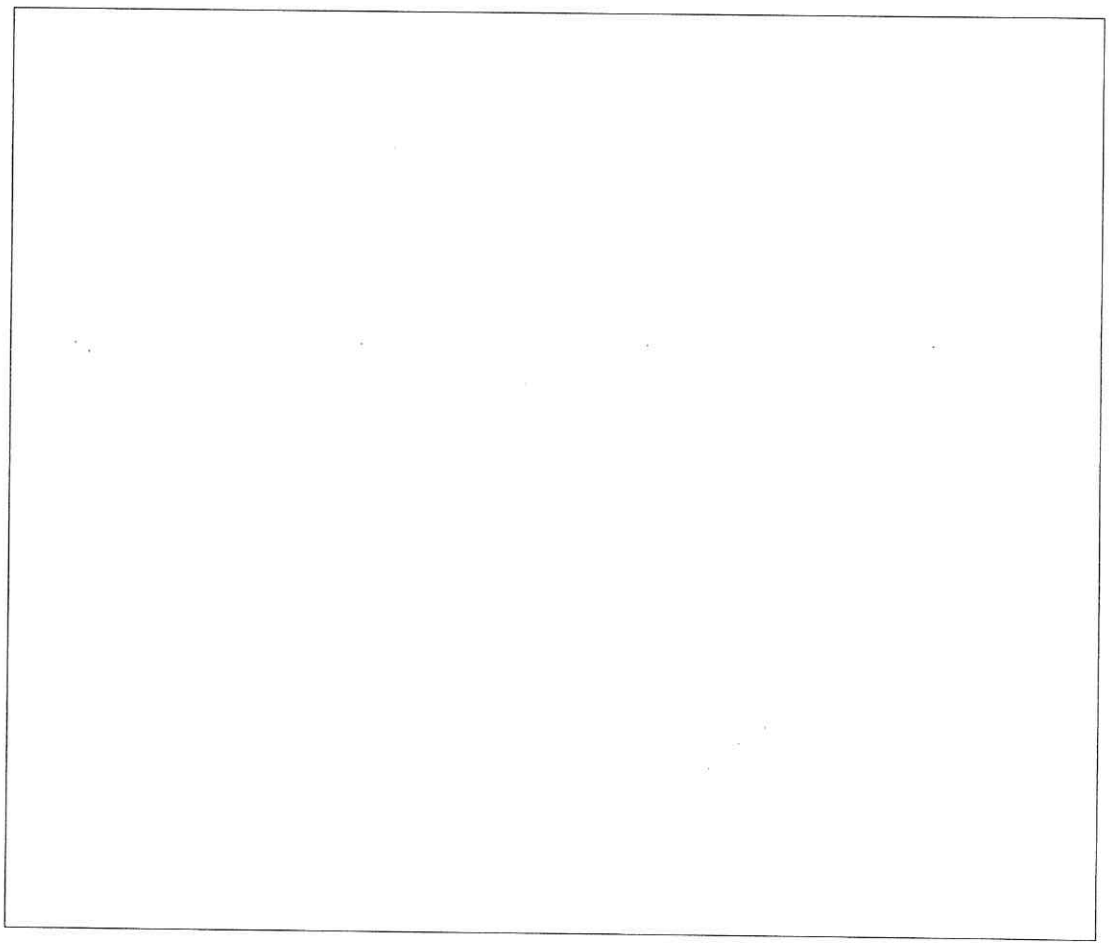
QUESTION 3

(a) Explain the following code:

```
r=constrain(r, 0,255);
```

Then rewrite the above processing code using IF conditional statement.

[5 marks]



Continued...

(b) Write the output of this function.

```
Int grade = 50;
While (grade<60) {
Println ("Your grade is F");
x +=1;
}
```

[2 marks]

(c) Declare and initialize the elements of an array all at once. Write the two lines of declaration and initialization of the array using processing based on the following description.

"...Declare and initialize a list of array with 6 integer elements all together. Name the array arrayOfStaffNombor. Declare and initialize another array with 6 floating points elements all together. Name the array ArrayOfSalary"

[3 marks]

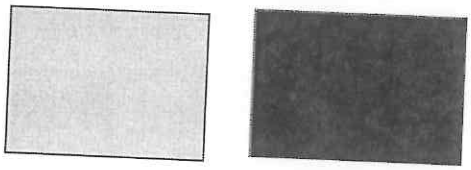
Continued...

QUESTION 4

(a) Complete the following codes to implement a simple rollover. The rectangle will be changed to black color when the mouse is over the rectangle.

(when mouse is ***Out*** the rectangle, It change color To grey (initial color))

(when mouse is ***In*** the rectangle, It change color To black)



[4 marks]

```
int x = 50;
int y = 50;
int w = 100;
int h = 75;
void setup() {
  size(200,200);
}
void draw() {
  background(255);
  stroke(0);
  if (_____ && _____ && _____ && _____) {
    fill(0);
  } else {
    fill(175);
  }
  rect(x,y,w,h);
}
```

Continued...

(b) Write the codes that will load an image name mypic.jpg into an output screen size of 400x400. Start the display of the image at location point (0,0). Your code should consist setup() and draw().

[6 marks]

End of Page.